

Task	Level of Cognitive Demand	Explanation of Categorization	Features
A	Doing mathematics	There is no pathway suggested by the task. The focus is on looking for the underlying mathematical structure.	<ul style="list-style-type: none"> • Requires an explanation • Uses manipulatives • Involves multiple steps • Uses a diagram • Is symbolic/abstract • Is “textbook-like”
B	Procedures with connections	The task focuses attention on the procedure for finding percents, but in a meaningful context.	<ul style="list-style-type: none"> • Has “real-world” context • Involves multiple steps • Is “textbook-like”
C	Doing mathematics	There is no predictable pathway suggested by the task and it requires complex thinking.	<ul style="list-style-type: none"> • Requires an explanation • Has “real-world” context • Involves multiple steps • Uses a calculator • Is “textbook-like”
D	Procedures without connections	The task requires the use of a well-established procedure for finding the sales price. There is no connection to meaning.	<ul style="list-style-type: none"> • Requires an explanation • Has “real-world” context • Involves multiple steps • Is “textbook-like”
E	Procedures with connections	The task provides a procedure for taking a fraction of a fraction but connects the procedure to meaning.	<ul style="list-style-type: none"> • Uses manipulatives • Involves multiple steps • Uses a diagram • Is symbolic/abstract
F	Procedures without connections	The task provides a procedure for finding the perimeter but requires no connection to meaning.	<ul style="list-style-type: none"> • Uses manipulatives • Uses a diagram • Is symbolic/abstract
G	Procedures with connections	The task provides a procedure for finding the average that focuses on the underlying meaning of the average.	<ul style="list-style-type: none"> • Requires an explanation • Involves multiple steps • Uses a diagram • Is symbolic/abstract
H	Memorization	The task requires the recall of previously learned information. No understanding is required.	<ul style="list-style-type: none"> • Is “textbook-like”

FIGURE 1.4. Cognitive demands and features of the eight simple tasks.